Small Business Innovation Research/Small Business Tech Transfer

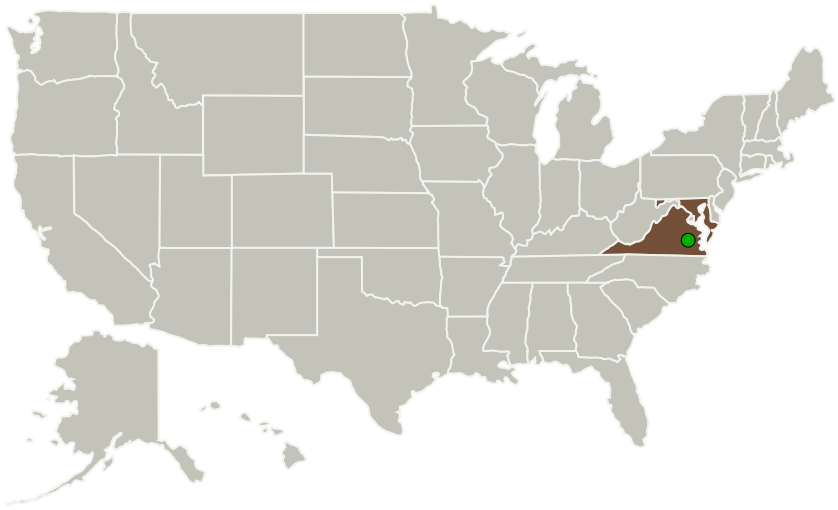
Integrated Testbed for Environmental Analysis of NextGen Concepts using ACES, Phase II

Completed Technology Project (2011 - 2013)

Project Introduction

The key innovation in this effort is the development of an industrial-grade analysis testbed to integrate simulation tools, such as ACES, with aviation environmental effects models, such as the Aviation Environmental Design Toolkit (AEDT), to provide a "360-degree" evaluation of new operational concepts. The testbed will be demonstrated by producing such a "360-degree" evaluation of advanced NextGen concepts such as time-based merging and spacing at ATL airport, high-density metroplex concepts, and the efficiency of new route structures with environmentally responsible aircraft using RNAV routing. The industrial-grade software will be implemented in Java and can potentially reduce the analysis time for combined performance/environmental analyses by several months over the current state of the art.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Intelligent Automation, Inc.	Lead Organization	Industry	Rockville, Maryland
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

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Primary U.S. Work Locations	
Maryland	Virginia

Project Transitions

June 2011: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139014)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Intelligent Automation, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Frederick Wieland

Co-Investigator:

Frederick Wieland

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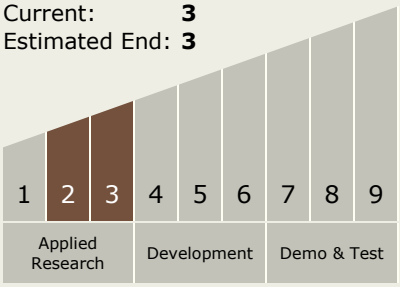
Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.3 Aero Propulsion
    - TX01.3.1 Integrated Systems and Ancillary Technologies

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System